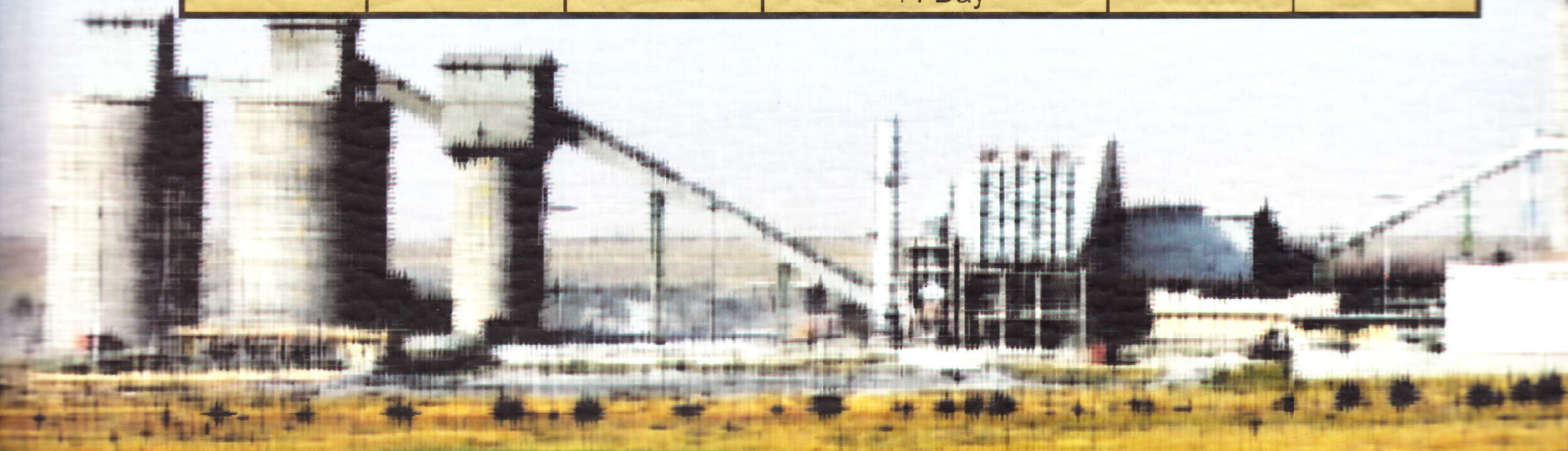


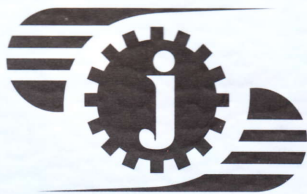
Jovein Cement Company

Specifications Report
Portland Cement Type 5
Sample test : ISIRI 389



Chemical Requirement			Physical Requirement			
Properties	In Accordance With ISIRI 389	Production Of Jovein	Properties	In Accordance With ISIRI 389	Production Of Jovein	
% SiO ₂	*	20.64	Specific surface area (Cm ² /gr)	2800 (min)	3750	
%Al ₂ O ₃	*	4.05	Sieve Residue 90 μm (170 Mesh)	*	0.4	
%Fe ₂ O ₃	*	3.78	Sieve Residue 45 μm (325 Mesh)	*	4.5	
%CaO	*	62.64	%Autoclave expansion	0.8 (max)	0.16	
%Mgo	5(max)	3.2	Vicat test	First (minute)	45 (min)	125
%Total Alkali	*	1.15		Last (hr)	6 (max)	3:15
%SO ₃	2.3(max)	2.21	Compressive strength (Kg/Cm ₂)	3 DAYS	85 (min)	360.0
%L.O.I	3(max)	0.60		7 DAYS	150 (min)	445.0
%I.R	0.75(max)	0.36		28 DAYS	270 (min)	510
%L.S.F	*	96.33	Compressive Bending (Kg/Cm ₂)	3 DAYS	*	53
%C3S	*	59.17		7 DAYS	*	61
%C2S	*	14.56		28 DAYS	*	79
%C3A	5(max)	4.34	Specific Gravity		*	3.16
%C4AF	*	11.49	Free Cao		*	1.1
%(2C3A+C4AF)	25(max)	20.17	%Sulphate Expansion 14 Day		0.04(max)	0.03



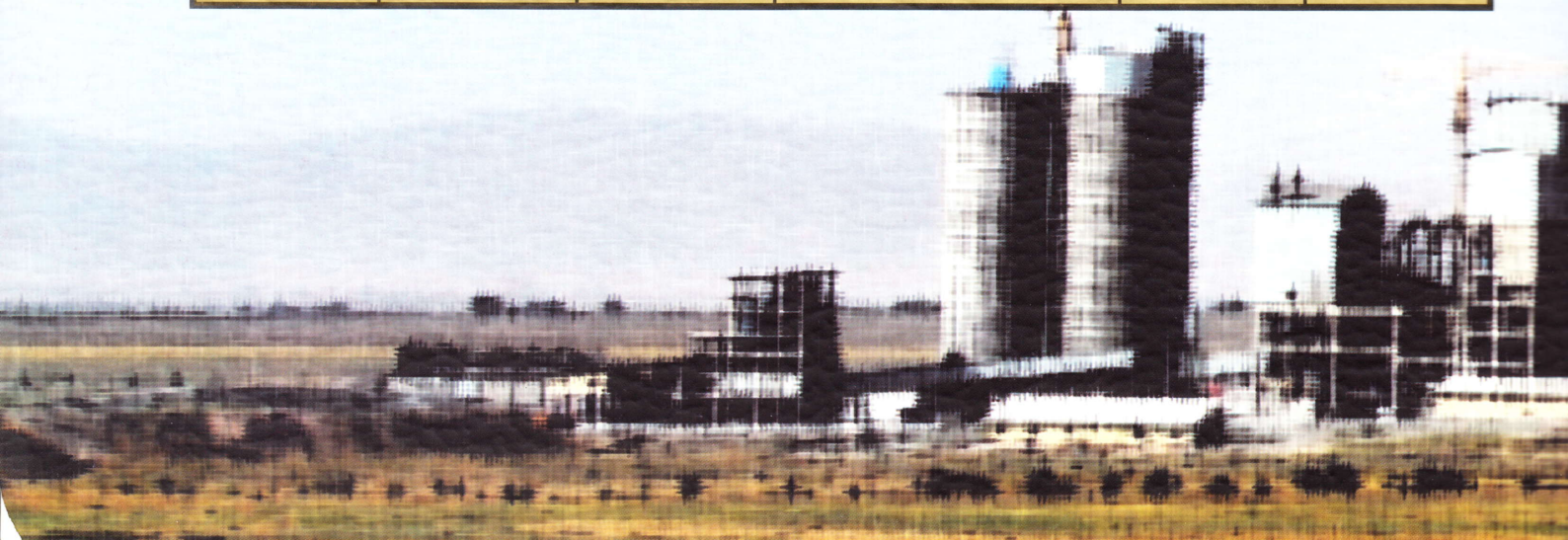


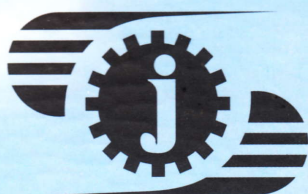
Jovein Cement Company

Specifications Report
Portland Cement Type 1-525
Sample test : ISIRI 389



Chemical Requirement			Physical Requirement			
Properties	In Accordance With ISIRI 389	Production Of Jovein	Properties	In Accordance With ISIRI 389	Production Of Jovein	
% SiO ₂	*	20.45	Specific surface area (Cm ² /gr)	2800 (min)	3850	
%Al ₂ O ₃	*	4.46	Sieve Residue 90 μm (170 Mesh)	*	0.2	
%Fe ₂ O ₃	*	3.51	Sieve Residue 45 μm (325 Mesh)	*	4.8	
%CaO	*	62.25	%Autoclave expansion	0.8 (max)	0.18	
%Mgo	5 (max)	3.59	Vicat test	First (minute)	45 (min)	85
%Total Alkali	*	1.11		Last (hr)	6 (max)	3:05
%SO ₃	3 (max)	2.85	Compressive strength (Kg/Cm ₂)	2 DAYS	200 (min)	434.0
%L.O.I	3 (max)	0.60		7 DAYS	*	514.0
%I.R	0.75 (max)	0.34		28 DAYS	525 (min)	598
%L.S.F	*	96.06	Compressive Bending (Kg/Cm ₂)	2 DAYS	*	59
%C3S	*	54.89		7 DAYS	*	70
%C2S	*	17.24		28 DAYS	*	76
%C3A	*	5.9	Specific Gravity		*	3.18
%C4AF	*	10.67	Free Cao		*	1.5





Jovein Cement Company

Specifications Report
Portland Cement Type 2 (OPC)
Sample test : ISIRI 389



Chemical Requirement			Physical Requirement			
Properties	In Accordance With ISIRI 389	Production Of Jovein	Properties	In Accordance With ISIRI 389	Production Of Jovein	
% SiO ₂	20 (min)	20.38	Specific surface area (Cm ² /gr)	2800 (min)	3830	
%Al ₂ O ₃	6 (max)	4.13	Sieve Residue 90 μm (170 Mesh)	*	0.3	
%Fe ₂ O ₃	6 (max)	3.82	Sieve Residue 45 μm (325 Mesh)	*	4.3	
%CaO	*	62.96	%Autoclave expansion	0.8 (max)	0.18	
%Mgo	5 (max)	3.5	Vicat test	First (minute)	45 (min)	135
%Total Alkali	*	1.14		Last (hr)	6 (max)	3.20
%SO ₃	3 (max)	2.87	Compressive strength (Kg/Cm ₂)	3 DAYS	100 (min)	280.0
%L.O.I	3 (max)	0.98		7 DAYS	175 (min)	430.0
%I.R	0.75 (max)	0.38		28 DAYS	315 (min)	540
%L.S.F	*	97.8	Compressive Bending (Kg/Cm ₂)	3 DAYS	*	52
%C3S	*	60.1		7 DAYS	*	61
%C2S	*	13.1		28 DAYS	*	79
%C3A	8 (max)	6.2	Specific Gravity (g/Cm ³)	*	3.2	
%C4AF	*	11.6	Free Cao	*	1.2	

